

That the method of the two cycles would have given approximately correct rainfall variations in the majority of years is obvious, and that the calculated variations (more particularly in the case of Madras alone) should be smaller than the actual variations is not surprising, but the actual and calculated values in some years are so very divergent that it must be reluctantly conceded that it is impossible by this method "to determine beforehand with any certainty the probable amount of rain in any season, such as would admit of timely precautions being taken against impending drought."

[NOTE.—In publishing this important paper by Mr. Dallas promptly, without incurring the great delay that would be necessitated by submitting the proof sheets to him, several matters have been noticed by the Editor which, although unimportant to the general trend of the argument, may possibly be worth repeating as helpful to the reader.

The word "variations" is used by Mr. Dallas always in the same sense as the word "departures" is used by other writers, viz., the observed value minus the computed value, so that a plus variation is also a plus departure.

The adoption of a regular 11-year cycle, instead of the somewhat irregular sun-spot numbers, which are given in Table VIII (inasmuch as the 11-year and the sun-spot cycles depart widely from each other), seems to show that the 11-year period has no direct connection with the sun spots, and it should, therefore, not be spoken of as a sun-spot period, but simply an 11-year cycle.

The pressures given in Table I for three different series of years should, strictly speaking, be reduced to a common system by adopting the years 1853–1896 as the basis. The mean pressures for these forty-four years are: Madras, 29.844; Bombay, 29.813; Calcutta, 29.784; the mean of all three is 29.814. Adopting this latter figure as the base, we reduce each of the three stations to a common standard by applying the corrections, –0.030, +0.001, +0.030. Fortunately these corrections are the same as those used by the author in preparing Table IV and Fig. 1.

With regard to the annual pressures for Mauritius, Mr. Dallas states that they were corrected for the 11-year cycle in order to obtain the curve of Fig. 2. We infer that the corrections were specially computed by him from the Mauritius observations, and that he does not mean to say that he corrected the latter by using the means for India given in Table III.

No reason is given for omitting from Tables IX and XI the earliest years, as given in Table VIII.

In Tables X and XII the author has compared together the Madras rainfall and the Indian pressure, but for quite different groups of years. If the comparison had been for a uniform system of stations and of years, the results might have been more harmonious. It is difficult to separate the influence of this discrepancy as to locality and time from the influence of the general want of physical connection between the rainfall and the pressure.

In Tables XIII, XIV, and XV the figures given in the manuscript for the variations of rainfall for all India show some slight discrepancies, viz.: XIII, 1886, +3.0; 1887, +2.4; 1889, +2.5; XIV, 1886, +3.2; 1887, +2.4; 1889, +2.4; XV, 1886, +3.2; 1887, +2.6; 1889, +2.4. These discrepancies the Editor has removed, so that the three tables may be harmonious.

With regard to the variations of rainfall at Madras, as given in Table XV, the reader will notice that the figures of column 5 may be reproduced by assuming the normal for Madras at 50.0 inches and computing from this the departures of the individual years given in Table VIII. Two small discrepancies will be found, viz., the variation for 1878 should be –21.3, and for 1890, –22.0, instead of –22.3 and –22.2, respectively, as published in Table XV.—ED.]

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MEXICAN CLIMATOLOGICAL DATA.

Through the kind cooperation of Señor Mariano Bárcena, Director, and Señor José Zendejas, vice-director, of the Central Meteorológico-Magnetic Observatory, the monthly summaries of Mexican data are now communicated in manuscript, in ad-